

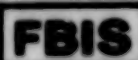
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18 September 1980

Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 62



FOREIGN BROADCAST INFORMATION SERVICE

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18 September 1980

WORLDWIDE REPORT

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FRENCH, ITALIAN NUCLEAR TECHNOLOGY TRANSFER PROGRAMS TO IRAQ

Iraqi Nuclear Ties Reassessed

Rome LA REPUBBLICA in Italian 23 Jul 80 p 14

[Article by Barbara Spinelli: "Are France and Italy the Godfathers of the Islamic Nuclear Bomb?"]

[Text] Rome--Will joint French and Italian nuclear assistance programs aid Iraq in building the atomic bomb? A substantial number of high-level experts in Europe and America are convinced that they will and predict that between now and 1985 the Bagdad government will have a "complete" nuclear capability, usable not only for civilian but also military purposes.

Neither of the two programs, considered individually, makes the manufacture of the so-called "Islamic bomb" possible. In 1976, France undertook to furnish a research reactor called "Osiris"--and now renamed "Osiraq"--and will deliver it next year with a shipment of 15 kg of uranium enriched at 93 percent. Using nuclear energy for military purposes requires 20 kg of uranium enriched at 90 percent, and Paris does not intend, at least for the moment, to furnish the missing quantity of uranium.

Italy undertook to furnish much less: four research laboratories, the most significant of which (and the most risky in the opinion of the experts) is a laboratory of radiochemistry equipped with a "hot cell" for "treating" radioactive products. However, Iraq has agreed to respect the supervision of the International Atomic Energy Agency, they tell us at the CNEN [National Nuclear Energy Commission], and does not at present have any intention of denouncing the Nonproliferation Treaty signed at the end of the 1960's. In addition, in an adjunctive exchange of letters, Bagdad has agreed to put in writing its willingness to respect the supervision clauses which Italy stipulated within the scope of the London accords. All materiel furnished is, therefore, "adequately covered by Iraq" in keeping with CNEN's requirements.

But a series of unknowns gives us cause to fear the worst. First, Iraq's new geopolitical vocation which, after Iran's defection, is headed toward

becoming the leading power in the Persian Gulf and presenting itself as active interlocutor between the two great powers of the Arab world as well as a "secular" alternative to the Pan-Islamism of Tehran. And the nuclear bomb is an important status symbol as shown by the somewhat complete entrance of India, Pakistan, South Africa and Israel into the "nuclear club." Secondly, Iraq's desire to train a well-prepared staff of nuclear experts in France and Italy: a desire which was quickly satisfied in Rome and Paris by circumstantiated agreements regarding professional training of Iraqi engineers.

It was with a certain degree of recklessness that France and Italy let themselves be lured into an affair which risks becoming gigantic before their very eyes. At least in our country, oil is the key which explains everything. As much as 20 percent of Italy's raw material requirements are now covered by Iraq which, together with Libya, has become one of our most prominent suppliers since the "loss" of Iranian oil. Therefore, Italy has enormous interests in Iraq as shown by an agreement, concluded in May, for the supply of warships at a total value of 2.5 trillion lire.

It is precisely on this point that doubts are arising: Why has our government (and ENI [National Hydrocarbons Agency] which is representing it) chosen unstable and unpredictable countries like Libya and Iraq as privileged interlocutors? Does not the excessive dependence which has been created expose Italy to risks which may become dangerous?

After months of silence, experts at the Ministry of Foreign Affairs are beginning to express far from negligible political concerns. And, as in France, the government now seems divided between those who would like to broaden cooperation with Bagdad (ENI, the minister of foreign trade) and those who would prefer greater caution.

To this have been added American pressures which, since March, have been urging the Italian leaders to postpone contracts with Iraq. Supporters of the contracts add that an Italian renunciation would not in fact signify a slackening of the Iraqi programs "but rather a number of setbacks [for Italy]"; like Libya, Iraq would not hesitate to turn to other suppliers. In this regard, reference is made to the agreement for nuclear assistance which Libya has just concluded with the USSR at a value ranging between \$300 and \$400 million.

Husayn Reiterates Nonmilitary Ends

Rome LA REPUBBLICA in Italian 23 Jul 80 p 14

[Article by Piero Benetazzo: "Iraq Saves Oil and Heads Toward Nuclear Energy"]

[Text] Bagdad, 22 July--"For years European Zionist circles have defined us as an uneducated people capable only of guiding camels. Now they are

accusing us of wanting to build the atomic bomb." In the opinion of Iraqi President Saddam Husayn, this contradiction seems to have a precise objective: "to keep the Arabs in a state of permanent technical and scientific underdevelopment." The nuclear problem--or better, "the campaign conducted in Europe"--was the first point which the Iraqi president wanted to take up with the hundreds of journalists who arrived in Bagdad for the 12th anniversary of the Iraqi revolution.

A complicated problem which needs developing; regional tensions, international problems converge and are superimposed on each other in a puzzle of difficult interpretation and political solution, especially for a country which, having emerged from the long isolation of intrasigence, again presents itself on the international scene with the ambition of being the "pivot" of the Arab world, guarantor of the security and stability of the gulf and "propelling force" of nonalinement (Bagdad will host the movement's summit meeting in 1982

Speaking at length with journalists, Saddam Husayn made it a point to stress the peaceful purposes of the "nuclear operation." He said, "Zionist propaganda forgets that that we signed a nonproliferation agreement and that current research has only civilian objectives: we want to profit from modern technology only for the good of our people." But Husayn then defined a precise problem of timing and political balance: He recalled that Tel Aviv did not sign the nonproliferation accord, maintained that the Israeli power plant of Dimona (built with France's support) has "profoundly military objectives" and--with rhetorical delivery--wondered why the "current defamation campaign is not directed rather toward those who in fact are using the atom for military purposes." A question with which Europe--which is projecting its strategy into the Middle East--should certainly come to terms.

The world of oil is in fact turning toward the atom with increasing determination. This is imposed by the "short remaining time" of current oil reserves (an average of 20 to 40 years) and the need to create as rapidly as possible a national productive base which finds its easiest and most logical "peak" in oil. The problem has already been discussed among the OPEC countries (and is among their future objectives) and is now being definitely tossed back to Iraq, the second-largest producer in the organization and the country which boasts of having the most abundant and richest reserves ("the last barrel of oil is Iraqi"), but also one which carries out a policy of constant price moderation in perfect alinement with Saudi Arabia which has always been a friend of the Western world.

Therefore, an important and binding "signal." Iraq's current daily production of 3.5 million barrels, which should shortly become 4 million, has rapidly filled the void left by the Iranians. In 1983--when an additional five large deposits recently discovered will be put into operation--the productive capacity will increase by another 2 million barrels. "But," Oil Minister 'Abd al-Karim warned, "for a long time to come we shall not produce

more than we need." That is, sufficient time for the country to emerge from its state of underdevelopment and become endowed with the most modern technology; then Iraqi oil will cease to be a bartering commodity. How much time this will require is difficult to say. In official circles it is conjectured that it will require two or, at the most, three 5-year plans. A forecast which, in view of the backwardness of the Iraqi situation, seems perhaps to be guilty of an excess of revolutionary euphoria.

But, in fact, things are at times moving with frenetic haste, and today's Iraq seems to be an enormous construction site: reinvesting its oil income (which Western estimates place at more than \$20 billion), it is directing its efforts toward the development and industrialization of agriculture, the erection of public buildings and the construction of roads and railways. And it is particularly laying plans for an industrial arrangement--petrochemical complexes, fertilizer factories--where oil represents the raw material. Iraq is even subordinating its price policy to this need for rapid development to preclude the possibility, according to Karim, that a lack of programing and an intransigent attitude might make "technological trade" with the West more problematical.

8568

CSO: 5100

AUSTRALIAN LABOR PARTY DEMANDS FINNS KEEP URANIUM FROM USSR

Helsinki HELSINGIN SANOMAT in Finnish 16 Aug 80 p 22

[Article: "Australian Labor Party Demands Guarantees; Uranium Sold to Finland Must Not Be Exported to USSR."]

[Text] The Australian Labor Party, which is in opposition, wants guarantees from the government that Australian uranium sold to Finland will not be exported to the Soviet Union after its use.

Labor Party representative Tom Uren stated on Friday that on the basis of agreements between Finland and the Soviet Union it is justifiable to assume that spent nuclear fuel and plutonium will travel from Finland to the Soviet Union.

According to the uranium delivery agreement concluded on Wednesday by Teollisuuden Voima [Industrial Power], the uranium imported from Australia will be concentrated in the Soviet Union. The nuclear fuel made from the concentrated uranium will then be used at Industrial Power's nuclear power plant in Olkiluoto.

According to Industrial Power the above criticism was expected. Information Chief Taina Salonen states that Industrial Power has not yet made an agreements about the disposition of spent nuclear fuel. The nuclear fuel can be stored at Industrial Power's plant for 10 years, and during that time the development of treatment plants and competition on the world market will be studied.

TVO [Industrial Power] reached an agreement on uranium deliveries with the Australian Queensland Mines Corporation. According to the agreement 690 tons of uranium will be delivered in the years 1981--1989. The agreement has been presented to the Australian Government for formal approval.

Australian Vice Premier John Douglas Anthony considered this uranium trade

as a significant step in promoting Finnish and Australian trade.

In Finland the Ministry of Trade and Industry, which has requested statements from the Atomic Energy Committee and the Radiation Safety Institute, is handling the trade agreement.

The agreement concluded with TVO represents the first transaction with a European country by the Queensland Mines Corporation in 10 years. The Australian Government has established certain conditions with respect to uranium transactions for the purpose of preventing the proliferation of nuclear weapons. Finland is one of the first countries which has concluded a treaty with Australia concerning the transfer of nuclear materials.

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CSO: 5100

FRENCH SEEK AUSTRALIAN PARTNER FOR URANIUM MINING

Canberra THE FINANCIAL AUSTRALIAN in English 4 Aug 80 p 14

[Article by David Koch: "CSR Eyes French Uranium Deal"]

[Text] CSR Ltd is believed to be close to signing as an equity partner in the French-owned Ben Lamond uranium deposit near Townsville in Queensland.

Sources close to the industry say the diversified sugar refinery-cum-macadamia nut grower-cum-energy producer is looking to a substantial slice of the \$50 million project thereby projecting the deposit closer to development.

Ben Lamond, owned by the French-controlled Minatome Australia Pty Ltd, is looked upon as a crucial ingredient in that country's nuclear power build-up.

But development has been slow while suitable Australian partners were sought.

The deposit, about 60km from Townsville in Northern Queensland, was discovered in late 1973 and contains 3000-5000 tonnes of uranium oxide.

Although small compared with the reserves at Jabiluka (207,000 tonnes of uranium oxide), Ranger (100,330) and Nabarlek (9095), Ben Lamond is the most important of Minatome's five uranium prospects.

Minatome, incorporated in 1967 as Pechiney (Australia) Pty Ltd and adopted its present name in 1976, is a wholly-owned subsidiary of the giant Minatome SA group of France.

The latter is, in turn, owned jointly by two French companies Compagnie Francaise des Petroles (Total) and Pechiney Uine Ruhlmann.

Early last May Minatome was granted a uranium mining lease over Ben Lamond by the Queensland Government which virtually sealed the go-ahead for development of the area

pending approval by the Federal Government.

This approval is tied to the Australian participation requirement which demands at least a 50 per cent local interest.

The group is currently at an information-gathering stage of development at Ben Lamond with environmental impact and feasibility studies under way.

It is believed discussions with the Federal Government are in progress and possible Australian partners are being discussed.

The addition of Ben Lamond to CSR's energy portfolio would be an important acquisition and add to an already-impressive list of second-line uranium areas in which CSR has become involved.

Currently CSR has a 25 per cent interest, through AAR, in the Honeymoon deposit at Lake Frome in South Australia which looks to be suitable for solution mining.

Subject to government approval, it is proposed to establish a 110 tonnes a year pilot plant at Honeymoon involving a total investment of \$5.5 million.

As well, the group, again through AAR, holds a 12.5 per cent stake in the Westmoreland area of Queensland.

But while uranium mining is apparently looking increasingly attractive to CSR, it is also investigating - with BHP, WMC and Peko-Wallend - the feasibility of establishing a commercial uranium enrichment plant in Australia, a fact which could explain a CSR-Minatome connection at Ben Lamond.

Delegations from French Government and private enterprise have

flooded into Australia over the last year eager to establish an Australian uranium mining and enrichment base.

This is planned to counter the chronic shortage of nuclear fuel fast descending on that country.

France's intensive push into nuclear power is well known and is beyond the point of no return, despite growing world rejection of this type of energy source.

A main aim of the country is to gain independence from crude oil imports, and its plans to lift the nuclear-generated proportion of its electricity output from 15 per cent to 50 per cent by 1985 is seen as one way of meeting this aim.

With virtually no deposits of fossil fuels — oil, coal and gas — and hydro-electric power production at saturation point, France is dependant on importing its energy needs.

The country imports 77 per cent of its fuel, and all its oil, and is expected to chalk up a gargantuan \$1525 billion import fuel bill this year.

This has left the French economy vulnerable to decisions taken abroad and has become a heavy burden on its finances.

Electricite de France already has seven nuclear power plants and is constructing, or planning, another 13 to alleviate the position.

Although an enrichment plant is in operation in France at Tricastin in the Rhone Valley, world demand for enriched uranium is growing despite the adverse publicity.

Uranium ore costs about \$60,000 a metric tonne but when enriched costs about double this amount.

Sources of fuel for such a massive project is a major problem for France which has been compounded by the instability of the country's traditional source of supplies in Africa.

France currently imports uranium from West Africa's Niger and Chad.

The advantage to the French Atomic Energy Commission in establishing an Australian enrichment plant is our cheap coal-based electricity to run the plant.

A target output for the Australian plant would be three million SWU (separative work units, which combine the quantity of natural uranium with its degree of enrichment) on completion of the first stage and 5-6 million SWU when at full production.

A joint venture between CSR and Minatome at Ben Lamond could provide the ideal deposit for a pilot enrichment plant both politically and financially.

The sheer financial muscle of the two French energy groups backing Minatome, and CSR would ensure sufficient finance is available while Queensland, with Western Australia and South Australia, are eager to take on an enrichment plant.

But the marketing of the output, whether an enrichment plant adjoins the deposit or not, could prove a bone of contention between the partners.

The French are understandably keen to secure most of the output for shipment to France.

CSR, on the other hand, could prefer a different marketing arrangement given its already well-established energy customers.

Minatome's other uranium interests include a joint venture with West German-controlled Urangesellschaft Australia Pty Ltd at Onslow in Western Australia; another joint venture with the German group at Broken River near Townsville in Queensland; a prospect at Georgetown in Queensland; and a "sleeping" joint venture with Kratos Uranium NL and Wyoming Mineral Corp in the Northern Territory.

DETAILS OF BANGLADESH-FRENCH NUCLEAR AGREEMENT GIVEN

DM260225 Hong Kong APP in English 0136 GMT 28 Aug 80

[Text] Dacca, 27 Aug (APP)--The nuclear cooperation agreement expected to be signed between France and Bangladesh during President Ziaur Rahman's brief visit to Paris next Friday will be a general agreement on cooperation in nuclear technology, official sources said here today. The proposed agreement will be a sort of "umbrella accord" providing for technical assistance from France for the development of nuclear technology in Bangladesh, which has already signed the nuclear non-proliferation treaty. The signing of the agreement would immediately benefit Bangladesh in procuring a nuclear reactor for its Rappur nuclear power project in Patna district about 120 km northwest of here.

Negotiation on the reactor for the Rappur project was underway between the two countries but the size and nature of the proposed reactor Bangladesh would like to install for generating electricity for the country's northern districts facing acute shortage of power was still uncertain. The Rappur project was envisaged in the 1960's when Bangladesh was still East Pakistan. Pakistan Minister Golan Parooq visited Paris at that time seeking French aid for the project. But subsequently, with growing differences between the then Pakistan central government and the then East Pakistan over political and economic questions, the project was shelved and was not pursued in right earnest.

Besides France, the Pakistan authorities at that time also contacted Belgium for possible technical and financial assistance for the Rappur project, the size of which used to vary from 125 to 300 megawatt in the course of negotiations. The Rappur project covers several thousand hectares of land on the left bank of the River Ganges (Padma) down the Hardinge Bridge. Though the project site covers large areas with several buildings and structures here and there, the delay in the procurement of the required reactor has practically put the whole project into uncertainty.

After the emergence of Bangladesh in 1971, the Rappur project lost proper attention of the then Awami League government of Sheikh Mujib. The delay in implementing the project often became political issues with opposition parties accusing the government of neglecting the project. With the present government coming to power a few years ago, the issue was revived and President Zia issued directives a few months ago to resume work on the project. The urgency was felt in view of an acute shortage of power in the northern and southwestern parts of Bangladesh causing impediments for speedy industrialisation and upliftment of agriculture.

After ratifying the non-proliferation treaty, Bangladesh recently resumed negotiations with a number of countries including France for supply and installation of nuclear reactor for the project. Foreign minister Shaukat Haq said recently that Bangladesh had been negotiating with France for the procurement of the reactor for the Rappur project which, he pointed out, would be for peaceful purposes. He did not say the size of the reactor but the State Minister for Science and Technology Dr R.A. Ghani was quoted as saying recently that work on the 125 megawatt nuclear project costing taka 4 billion (about \$267 million) would be completed in 6 years.

Officials here expressed optimism about the negotiations currently underway with France for the project which, when completed, will be Bangladesh's first nuclear power plant.

The negotiations are likely to take positive shape during President Zia's ensuing visit to Paris at the invitation of President Giscard d'Estaing next Friday and also after the signing of the nuclear cooperation agreement between the two countries.

CSO: 5100

BANGLADESH OFFICIAL SEES 'GOOD PROGRESS' ON NUCLEAR DEAL WITH FRANCE

LDO51437 Paris LE MONDE in French 31 Aug-1 Sep 80 p 2

[Report by Patrice de Beer: "Bangladesh and France Have Signed a Draft Agreement on Nuclear Cooperation"]

[Excerpt] The Bangladesh president's short "working visit" to France ended on Friday evening. After luncheon at the Elysee followed by talks with Mr Giscard d'Estaing, the two presidents watched the signing of two bilateral agreements--a financial agreement and an agreement on nuclear cooperation. Secretary of State to the Ministry of Foreign Affairs Olivier Stirn is to visit Bangladesh before the end of the year. Gen Ziaur Rahman, with whom we met after his visit to the Elysee, stated that he is "very pleased with France's friendly attitude toward Bangladesh." He hopes that "as a result of better understanding, cooperation between the two countries can develop even further." He attaches great importance to the agreement on nuclear cooperation which, according to him, should make it impossible to build a nuclear power station at Ruppur in the country's northern region, "which suffers from a serious electricity shortage." "Details are being worked out and we are now making the necessary financial arrangements. We have made good progress and the question should be resolved in the near future," he added. He was referring to requests for credit made by Dacca in several Arab countries, including Saudi Arabia and Abu Dhabi, with a view to financing this project whose cost has been estimated at Fr400 million.

Common Interest in Indian Subcontinent

However, it has been noted in Paris that the agreement signed by the two countries is only a draft agreement which lays down conditions for such cooperation and also for exchanges of information and trainees, and that no decision has been made with respect to Ruppur. In addition, Bangladesh wants to build a research reactor. In conclusion, Gen Ziaur Rahman told us that his country and France have "similar" views on Afghanistan and Kampuchea and that he is "pleased to see that France is showing increasing interest in the Indian subcontinent." Let us recall that since the beginning of the year Mr Giscard d'Estaing has visited India, Mr Manery Sri Lanka and Mr Stirn Pakistan.

CSO: 5100

NPT CALLED TO DEFEND ITS 10-YEAR RECORD AT GENEVA MEETING

Buenos Aires CLARIN in Spanish 5 Aug 80 p 10

[Article by N.M.: "The Polemical Treaty"]

[Text] The second conference on the revision of the Treaty on the Nonproliferation of Nuclear Weapons (NPT) will be held this month in Geneva, which is an excellent opportunity to get an overall view of international nuclear activity, to determine how much the arsenals of the atomic powers have increased since the treaty became effective in 1970 and to learn what problems are being encountered by states which do not have nuclear weapons in the application of atomic energy for peaceful purposes.

Nuclear energy erupted on the world with the atomic bomb explosions in Hiroshima and Nagasaki in August 1945 when the United States--with the situation in Europe under control--decided to end the war in the Far East.

Since then, the international situation has changed: The American monopoly came to an end and is now shared by England, the Soviet Union, France and, more recently, the PRC.

In other words, the same nations which decided to assign themselves seats with veto power on the UN Security Council wound up being "nuclear powers."

The key year in giving impetus to the application of nuclear energy for peaceful purposes in the noncommunist world was 1957, since it was then that the International Atomic Energy Agency (IAEA) was established in Vienna. It was designed to make the benefits of nuclear energy available to countries which wanted to apply it peacefully.

From 1955 to 1965, the United States promoted the development of atomic knowledge in a considerable number of countries, including Argentina; however, in the second half of the decade, it purposely began to win adherents to the philosophy of "nonproliferation," whose principal objective is to "freeze" the number of nations which have the bomb, without too much importance being given to the number and power of the nuclear devices in possession of countries which had already mastered the technology.

This philosophy was agreed to by the United States, the USSR and England, states which promoted the NPT at the United Nations.

A considerable number of nations--111 as of 31 December 1979--adhered to this philosophy, including some which at the beginning had offered resistance, such as Japan, the FRG and Switzerland itself.

Two nuclear powers--China and France--did not adhere to the treaty nor did other countries such as Argentina, Brazil, Colombia, Cuba and Chile on our continent and Pakistan, India, Israel, Egypt, Spain and South Africa in other regions.

Another milestone was reached with the "peaceful explosion" of an atom bomb by India in May 1974, without violating any international safeguard treaty or accord, by using Canadian technology for natural uranium reactors "moderated" by heavy water.

India's atom bomb explosion made the world wonder--and it is still doing so--how supplying countries which were always so careful "had slipped up" in this case. There is one hypothesis, which has never been completely verified, according to which there was interest in having a certain nuclear capability developed close to the PRC with deterrent intentions, even though at the time, 1974 Beijing had been accepted as a geopolitical reality.

From that moment, the conditions for the transfer of nuclear technology hardened substantially and to the restrictions of the NPT were added those imposed by the London Club.

Argentina had already opted for the natural uranium-heavy water process, having lost the possibility before 1974 of obtaining the technology to fabricate the moderator under more favorable, simpler and less traumatic conditions than those which have now been granted to Argentina by Switzerland.

Despite the fact that nuclear energy can be applied beneficially in a great many human activities--research, medicine, industry, etc.--the production of electricity (nuclear-generated electricity) is the principal field of endeavor.

The reason given for the application of restrictions is that in reactors destined for the generation of electricity from nuclear power, when the uranium burned to produce the heat which generates the steam for the turbines is removed, plutonium, a product of fission, is also obtained and can be used to make rudimentary bombs such as India's.

The case of the PRC is noteworthy. A nuclear power, lately it has begun to consider the possibility of buying a nuclear electric reactor in the United States or France.

The NPT provides that this technology can be transferred to a "nuclear power" without requiring safeguards; it remains to be seen whether the possible sale will be made in accordance with this clause or whether China will agree to international inspectors at its nuclear installations.

There are countries, such as Argentina, Brazil and Pakistan, among others, which have been mentioned as being of the verge of having the bomb and some of them, such as Israel and South Africa, as countries which have nuclear capability. The mistake consists in associating this capability with the owning of nuclear electric reactors as is the case with China.

The second conference on the revision of the NPT will be held under these circumstances. The conference delegates will have to answer two basic questions: Have the 10 years during which the treaty has been in effect made any positive contribution to detente in international relations and, more specifically, to world peace? And: Have the nonnuclear countries, which by adhering to the NPT agreed to have limitations imposed upon them, received any benefits from the transfer of technology?

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CSO: 5100

BRIEFS

AUSTRALIAN-SOVIET URANIUM ACCORD--Canberra, 19 Aug [AFP]--The Australian Government has accepted assurances from the Soviet Union that it will conform to international nuclear safeguard agreements when enriching Australian uranium. The Australian minister for trade and resources and deputy prime minister, Mr Doug Anthony, made this statement in Federal Parliament today in response to an attack by the opposition over the government's decision to allow 900 short tons of uranium concentrates, bound for Finland, to be enriched in the Soviet Union. The opposition had requested the government to reconcile this with its earlier statement that the Soviet Union's invasion of Afghanistan posed the greatest threat to peace since World War II. Mr Anthony said in reply that what was of concern to Australia was that the Soviet Union conformed to international nuclear safeguard agreements--and that Australia felt it could accept the Soviet Union's assurances that it would. He said that Australian uranium would go to the USSR on an "all in, all out basis" and added "It must be remembered that the Soviet Union is a member of the nuclear nonproliferation treaty." The opposition member who raised the issue, Mr Malcolm Uren, is leader of the anti-uranium campaign in Australia. He said he failed to see how a government which, following the Soviet invasion of Afghanistan, declared "there would be a war in three days" could now accept such assurances from the USSR. Mr Anthony pointed out that in 1980, 50 percent of enriched uranium used by Western Europe will have been processed in the Soviet Union. [Text] [OW191413 Hong Kong AFP in English 0750 GMT 19 Aug 80]

CEMA ON NUCLEAR POWER--The East European socialist countries, the Soviet Union and Cuba have embarked on a joint program of developing the nuclear power industry in the 1980. [as published] This has been stated by Andronik Petrosyants of the Soviet Union who is the chairman of the Permanent Committee on the Peaceful Uses of Atomic Energy under the Council for Mutual Economic Assistance. The Soviet Union is to help other member countries of the socialist community in the large-scale construction of nuclear power stations equipped with new reactors. Their total generating capacity is to reach 37 million kilowatts by the end of the 1980's. This will considerably increase the energy potential of the member countries of the council and enable them to save up to 80 million tons of fuel a year. [Text] [LD120204 Moscow in English to North America 2300 GMT 11 Aug 80]

ARGENTINA, CANADA NUCLEAR PLANT AGREEMENT--Buenos Aires, 1 Sep (TELAM)--Today during a press conference Rear Adm Carlos Castro Madero, chairman of the National Atomic Energy Commission (CNEA), reported that this enterprise has become the main contractor for the construction of the Embalse nuclear plant. The agreement signed by James Donnelly for Atomic Energy of Canada, Ltd, (AECL) and Rear Adm Carlos Madero for CNEA allows the subcontracts signed by AECL with various local firms for the construction of the Embalse plant to be transferred to CNEA. The Canadian delegation, which had been visiting Argentina since 24 August, ended its stay in this country last Friday with the signing of the above-mentioned agreement. [Excerpt] [PYO21730 Buenos Aires TELAM in Spanish 2252 GMT 1 Sep 80]

FRG EXPECTS CANADIAN URANIUM--The Federal Government expects Canada to continue its deliveries of uranium beyond 1980. This was the reaction of spokesmen of the Foreign Ministry, the Federal Ministry of Economics and the Federal Ministry of Research and Technology today to reports that Canada is not planning to deliver any more natural uranium to the Federal Republic next year. A Foreign Ministry spokesman said the question of uranium supplies from Canada is in no way connected with the delivery of a nuclear powerplant to Argentina. Suspicions that Canada was not willing to deliver any more uranium to the Federal Republic arose because the interim agreement between Canada and Euratom expires at the end of the year, making new negotiations necessary. Canada insists on more stringent stipulations on weapons-grade uranium not being passed on. [Text] [LD141750 Hamburg Domestic Service in German 1700 GMT 14 Aug 80]

BULGARIAN-USSR COOPERATION--Moscow, 27 Aug (BTA)--Today in the Soviet capital an agreement was concluded on the working out of the technological project for the third stage of the Kozloduy atomic electric power station, with two power-blocks of 1,000 megawatt each. By this agreement a new stage in the cooperation of Bulgarian and Soviet power engineers is opened. For the intensified construction of the site, a new quay with a 400-ton crane and a big construction and assembly base will be built on the River Danube. The basic facilities are planned to be supplied in 1983 and at the end of 1984 the station is due to produce electric current. The second block is to be commissioned in 1986. The water of the River Danube will be used for cooling the reactors through a special system of technological water-supply. Besides the technological project, the USSR will render all-round assistance to Bulgaria both in the station construction itself and in delivering equipment, mechanical building facilities and specialists. [Text] [AU271927 Sofia BTA in English 1845 GMT 27 Aug 80]

AUSTRALIAN URANIUM SALES--Contracts were settled in Australia today for the sale of huge quantities of uranium yellow cake to German and Japanese companies. The trade and resources minister, Mr Anthony, announced in Canberra that the contracts for a total of 34,000 tons were valued at more than U.S. \$2,320 million at average market prices during 1980. They could be worth considerably more over the 14-year life of the contracts. [Melbourne Overseas Service in English 1130 GMT 18 Aug 80 OW]

CSO: 5100

JAPAN GIVES REASSURANCE ON NUCLEAR WASTE DISPOSAL

Canberra THE AUSTRALIAN in English 31 Jul 80 p 1

[Article by Alan Goodall: "Japan Wants Us To Take Nuclear Waste--Calmly"]

[Text] Japan is sending a nuclear 'hand-holding' mission to Australia to assure us that 5000 tonnes of radioactive waste to be dumped in the Pacific is "quite safe."

Japanese nuclear scientists will also sound out Australia on accepting higher radiation level nuclear waste in inland Australian ground storage.

The Tokyo team will go to Canberra, Sydney and Melbourne in the last week of August to say that Japan wants to dump more waste material.

The mission's technical leader Dr Takehiko Ishihara said yesterday he would hold private talks in Canberra and Sydney on the possibility of Australia storing higher level nuclear waste.

"I don't know if we will have time to talk with private groups of environmental protectionists," he said.

"Nor do I know if there will be any protests. I hope not. There is no danger from our program."

Japan has 125,000 tonnes of nuclear waste material and nowhere to put it. The energy-hungry nation's nuclear power industry's future is threatened unless it finds a disposal site.

Tokyo has told the Japanese nuclear industry it must assure eight South Pacific nations the ocean dumping is hazard free.

The mission leaves Tokyo for Guam about August 13, a week after the 35th anniversary of the atomic bomb drop on Hiroshima.

Monster rallies are being organised for Tokyo this weekend as a prelude in anti-nuclear protests in Hiroshima and Nagasaki.

The government had hoped to keep a low profile on the scheme, but protests are coming in from the National Assemblies of the Northern Mariana Islands, Palau and the Micronesia Federal Republic.

The Japanese Science and Technology agency has the task of telling South Pacific countries that no environmental hazards will follow the dumping of 10,000 concrete-sealed drums 900km north of the Mariana Islands at a depth of 6200 metres.

The waste, to be tipped in mid-1981 over a four month period, comes from Japan's 20 nuclear power stations, five nuclear research institutes and 3000 isotope-using hospitals, universities and laboratories.

Dr Ishihara, who will lead technical talks in Australia, said he hoped to sound out prospects for an Australian inground site for Japanese nuclear waste.

"Australia is a geologically stable land," he said. "It is far more stable than Japan. Here we have a big problem finding a secure ground site for 125,000 drums of higher level radioactive waste."

Dr Ishihara said another 125,000 drums of lower-level waste to be stored on the Pacific Ocean bed was "quite safe."

"There is absolutely no risk to Pacific nations," he said.

"The radiation level is around 1 millionth of the natural radiation already present in the environment.

"The material to go into the Pacific next summer will be below the low level of 100 curies per tonne."

Dr Ishihara said he hoped to meet Australian Atomic Energy Commission staff as well as Federal and State Governments, and environment protection experts. "I want to explain the security of our operation," said Dr Ishihara, who worked at the US National Nuclear Laboratory, Argonne, near Chicago and the International Atomic Energy Commission in Vienna.

"Our government has charged us with reassuring all South Pacific countries, including Australia, New Zealand and Papua New Guinea.

"In our five days in Australia I don't know if we will meet any protestors."

Because of Japan's small size and earthquake dangers the Government has approved the dumping of the first 10,000 drums of cement solidified waste 900 km south-east of Tokyo in mid-1981.

Nearest land to the tip site is Ogasawara Island (also known as Bonin), claimed by Japan.

CSO: 5100

INTER-ASIAN AFFAIRS

BRIEFS

AUSTRALIA-PHILIPPINE URANIUM EXPLORATION--A government announcement in Manila says Australia and the Philippines have agreed in principle to spend \$4.6 million in the next 5 years in a joint project to find and define prospective uranium mining areas. Details of the project were announced by the head of the uranium and coal division with the Bureau of Energy Development, (Rufino Bomasang), who said the formal agreement was expected to be signed this year. Work would probably get under way in the first quarter of next year. Mr (Bomasang) said Australia would provide \$2.5 million, technical experts and the technology to conduct surveys for uranium from the air. The Australian team would also train Filipinos in uranium exploration. Mr (Bomasang) said initial areas to be surveyed include the northern part of the main island of Luzon and four islands in the central Philippines. [Text] [Melbourne Overseas Service in English 0500 GMT 8 Sep 80 OW]

CSO: 5100

QUEENSLAND OPPOSES UNIONS ON URANIUM ISSUE

Melbourne THE AGE in English 5 Aug 80 p 5

[Article by Mark Baker: "Bjelke Court Bid To Block Union's C Ban"]

[Text]

BRISBANE. — The Queensland Government has begun court action to block union attempts to shut down the Mary Kathleen uranium mine. And the State Labor Relations Minister, Mr Campbell, said yesterday that the Government was prepared to seek deregistration of the Electrical Trades Union if it continued to press its members to quit the mine.

State Cabinet has asked the Queensland Industrial Court to overrule a directive by the union to its 32 members at Mary Kathleen that they conserve the ACTU's anti-uranium policy and resign their jobs.

Most of the 600 workers at the mine, including members of the Amalgamated Metal Workers and Shipwrights Union and the Federated Engine Drivers and Firemen's Association, have been defying the ACTU ban. But the AMWSU and the FEDFA are expected to join the ETU in pressing a labor boycott that could close the mine.

The Queensland Premier, Mr Bjelke-Petersen, yesterday defended the stand by the mine workers. "These men are only trying to protect their jobs and the welfare of their families," he said. "I totally support them and I give them full marks for what they're doing."

Policy

The electrical union sent letters to all its members at Mary Kathleen on 18 July outlining the anti-uranium policy endorsed by

the ACTU Congress last September. It is believed the men were threatened with disciplinary action unless they withdrew their labor within 31 days.

State Cabinet yesterday approved an application to the State Industrial Court for the union directive to be overruled. The Government has briefed a Queen's Counsel and expects the matter to be heard by the end of the week.

Mr Campbell said after the Cabinet meeting: "We believe this is a harsh and unconscionable action on the part of the union. It is not their role to take away the livelihood of these men." He

said the Government expected the court to rule in its favor. If the union refused to accept the ruling, the Government would move to have it deregistered.

Mr Campbell also said the Government was prepared to give financial support to the mine

workers to fight the union leaders. "The last thing we want to do is interfere with the proper running of a union," he said. "But when they start to come the heavy hand we have a public obligation to see what we can do about it."

Boycott

The Federal secretary of the ETU, Mr Cliff Dolan, said from Sydney that he expected the AMWSU and the FEDFA to join his union in enforcing the labor boycott at Mary Kathleen. Mr Dolan denied that the ETU was standing over its members. He believed the men would accept the ACTU policy once it was fully explained, he said. "We regard this as just another move by an anti-union Government to interfere with internal trade union matters."

He said the members would not be unemployed after leaving the mine as there was plenty of alternative employment in Queensland. Asked if he were concerned about the Government's threats against the union, Mr Dolan said: "We're not as stupid as John thinks. Let's leave it at that."

BRIEFS

PANCONTINENTAL URANIUM SEARCH--Pancontinental has recommenced exploration work around Sylvania Dome in Western Australia. [Earlier in 1980] the area was thought to be a lucrative diamond bearing section. Radioactive anomalies were detected through airborne surveys of Sylvania Dome which has prompted follow-up work by the Pancontinental/Power Reactor and Nuclear Development Corp of Japan joint venture. The group's quarterly report [released at the end of July] also showed interest in the nearby Luree Creek area where access tracks and drill pads are being constructed for a drilling program to begin in August. [Excerpts] [Canberra THE FINANCIAL AUSTRALIAN in English 4 Aug 80 p 14]

ROXBY DOWNS URANIUM--Western Mining Corporation Ltd and BP Australia have added substantially to the already vast potential copper-uranium reserves at the Roxby Downs discovery in South Australia with a 146 metre intersection averaging 3.25 percent copper and 0.68 kilograms tonne of uranium oxide. The previous best copper intersection was 3.2 percent over nine metres in diamond drill hole RD 22. [as published] WMC and BP have yet to put even a tentative figure on reserves for the Roxby Downs' Olympic Dam prospect, even though drilling has been in progress for nearly four years. However, South Australia's Minister of Mines and Energy, Mr Goldsworthy, says in an article in the Australian Mining Industry Council's latest Mining Review that the deposit could contain as much as 500,000 tonnes of uranium oxide and 15 million tonnes of copper metal. These figures are substantially greater than Australia's existing known resources of uranium and copper. The latest outstanding, Roxby Downs intersection, included in WMC's June quarter production report, was made in drill hole RD 39 between 368 metres and 514 metres. The same drill hole showed mineralisation to a depth of 956 metres. [Excerpts] [Sydney THE SYDNEY MORNING HERALD in English 1 Aug 80 p 17]

MARY KATHLEEN OUTPUT--The 51 percent CRA subsidiary [as published], Mary Kathleen Uranium, is maintaining production at comparable levels to last year, when a record profit was recorded. M.K.U.'s report for the June quarter showed production of uranium oxide at 212.1 tonnes following 155.7 tonnes in the previous three months. In the June half of 1979 production was 148.3 tonnes in the March quarter and 214.6 tonnes in the June quarter.

Industrial disruption affected both the 1979 and 1980 March quarters with the latter three months also suffering from mechanical problems. But a continuing softening of uranium prices will mean MKU will not match the \$17 million record profit earned in 1979. A big cause of the fall in prices is the US electricity authorities' unloading of surplus stocks. This decline will continue as a whole series of proposed nuclear plants projects have either been postponed or cancelled. [Text] [Melbourne THE AGE in English 31 Jul 80 p 18]

NUCLEAR REFERENDUM SUGGESTED--A Liberal back-bencher has called on the WA Government to hold a referendum on nuclear power. Mr T. A. Herzfeld (Mundaring) said that West Australians should be given the opportunity to determine the question for themselves. It was the only way to force the news media to give equal time and space to both sides of the question. Mr Herzfeld, opening the address-in-reply debate in the Legislative Assembly, said that the issue was likely to cause turmoil in the community. The campaign against nuclear energy had been cleverly orchestrated and little opportunity had been given for the community to evaluate the merits of each side of the argument. The news media were always willing to sensationalise any incident likely to help the opponents of nuclear power. In Sweden, Switzerland and some American States, where referendums were held, the majority had chosen nuclear power. Opponents of nuclear power still poured out arguments against its use despite an unblemished safety record and indisputable economic and environmental advantages. A WA referendum would require a commitment from all political parties to abide by the will of the people, he said. [Text] [Perth THE WEST AUSTRALIAN in English 1 Aug 80 p 12]

COCKBURN SOUND BASE--The State Government was confident that the Commonwealth Government would take any measures necessary to protect people living in the metropolitan area in the event of nuclear attack, the Premier, Sir Charles Court, told the Legislative Assembly yesterday. He was replying to a question from Mr M. J. Bryce (Lab., Ascot) who had asked what safety provisions the State Government was prepared to make. The Government was clearly obliged to make some provision, Mr Bryce said, because it had enthusiastically supported the actions of the Fraser government in making the metropolitan area a nuclear target by establishing the Cockburn Sound naval base. Sir Charles said that Mr Bryce had been a leader of those spreading alarmist notions about the base. He was being irresponsible by using a scarce tactic to try to create in the minds of the public a situation that did not exist. [Text] [Perth THE WEST AUSTRALIAN in English 1 Aug 80 p 13]

URANIUM MINE SECURITY IMPROVEMENT--The federal government says it will act quickly to improve security of Australia's uranium mines following allegations that 2 tons of yellow cake were stolen from the Mary Kathleen mine in Queensland. The energy minister, Senator Carrick, said security was not a matter for the states and depended on a voluntary code. He said he would seek a workable arrangement with the states but, failing that, would bring in the toughest possible regulations to insure more efficient stocktaking. Senator Carrick's announcement brought an accusation from the Australian Railways Union [ARU] that the federal government was ignoring security over the shipment of yellow cake out of Australia. Its Queensland secretary, Mr (Pat) Dunn, said the union had been lobbying for increased security for more than 5 years but Canberra had told the ARU that security arrangements were none of the union's business. The federal opposition's environment spokesman, Mr Cohen, called for a full public inquiry into security and safeguards surrounding the uranium industry. Mr Cohen said it was disturbing that 2 tons of yellow cake had apparently been stolen without any of the uranium producers reporting missing concentrates. And the movement against uranium mining said the theft of 2 tons of yellow cake valued at more than \$160,000 proved the existence of a blackmarket in nuclear fuels. The convener of the movement, Dr (Camilieri), said the amount stolen was too small for commercial use, raising the suspicion that its eventual use would have been in nuclear weapons. [Text] [OW111353 Melbourne Overseas Service in English 1130 GMT 11 Aug 80]

LABOR WARNING ON URANIUM--The federal opposition [Australian Labor Party] has called for government guarantees that Australian uranium sold to Finland will not be reprocessed in the Soviet Union. The opposition spokesman, Mr Uren, claimed that the Soviet Union reprocessed and separated plutonium from uranium used by Finnish atomic power stations. His comments follow the announcement that Queensland Mines Limited is to sell 900 tons of uranium to Finland between next year and 1989. The contract has still to be approved by the Federal Government, but the announcement has already been welcomed by the deputy prime minister, Mr Anthony. Mr Uren said Mr Anthony had told him that Finland's uranium requirements would be completely filled by the Soviet Union until 1990. Mr Uren called on Mr Anthony to provide details on what would become of the uranium sold to Finland. He said that to allow uranium to pass to the Soviet Union would be wholly inconsistent with the government's policies on the peaceful use of atomic energy. [Text] [OW142047 Melbourne Overseas Service in English 1130 GMT 14 Aug 80]

CSO: 5100

SAFETY PROBLEMS AT TARAPUR NUCLEAR PLANT DESCRIBED

Manila PHILIPPINES DAILY EXPRESS in English 24 Aug 80 p 5

[Article by Sumata Banerjee: "Inadequate Safety Devices Turning India's Nuclear Plant Into 'Atomic Monster'"]

[Text]

NEW DELHI — While the US Congress is still debating over President Carter's decision to send 38 tons of nuclear fuel to India's nuclear reactor at Tarapur, the plant itself is becoming an embarrassment for the government.

In the words of one observer, the Tarapur plant has become an "atomic monster," threatening the safety of Indians working there and those living nearby. The plant is located in Western India.

The reasons: inadequate radiation control and decontamination facilities, a series of accidents (or what in nuclear terminology are described as "incidents") and the irresponsible way of disposing radioactive wastes.

American legislators favoring Carter's decision hope to keep India away from the Soviets by supplying the fuel. But others fear the country will use it for making nuclear bombs. A few among them are concerned about the environmental and health hazards posed by the Tarapur plant.

The latest "incident" was a leak in the plant last March 14. Despite efforts by the Indian Department of Atomic Energy to hide or underplay the accident, news of the leak — which had all the potentials of a major disaster — emerged.

In the face of persistent opposition questioning, the government had to admit in Parliament that the "incident" did take place at Tarapur. The government's official version of the accident did not reveal in detail the cause of the leak. But

sources close to the plant disclosed that radioactive water from the core in the coolant system of Tarapur's Unit I gushed out of a 15-centimeter tube.

The water drained into the reactor building where maintenance personnel were working. The reactor core's water level began to fall and the emergency core spray had to be initiated to prevent the core from heating up.

Meanwhile, technicians at great risk pushed a temporary plug inside the open tube to stop the leak. In the process they were sprayed by contaminated water.

Sources said at least 26 technicians were rushed to a Bombay hospital for check-up. Although authorities claim they were safe, it is medical knowledge that radiation effects are slow and often unseen. For instance, doctors have found that radioactivity gradually destroys the iron content of a victim's blood, ravages his skin cells and even adversely affects his capacity to procreate.

Nuclear experts say that any basic safety requirements demand a back-up device — in cases when the main device fails — for plugging possible leaks. In Tarapur, this was apparently absent. In other words, the plug for stopping the leak should have been in the right position instead of being manually placed by technicians after the leak.

The March 14 "incident" was not the first. Between 1975 and 1979, at least 300 people were

affected by excessive radiation. A maintenance worker in the common chamber in 1970 died of asphyxiation when he was allowed to enter a nitrogen-inerted containment area without the prescribed safety equipment.

In the past 15 years, as many as eight scientists at the Bhabha Atomic Research Center committed suicide. It is yet to be established whether these suicides were out of personal frustration or physical problems brought by radiation.

Part of the responsibility for the inadequacies at Tarapur could be blamed on General Electric (GE)-USA which constructed the plant. Some safety faults have been detected even before the plant's completion. When pointed out, GE, however, did not take steps to correct and adopt adequate safety measures.

Indian personnel at Tarapur complained that GE refused to give the blueprints, thus preventing them from carrying out necessary repairs.

That over-exposure to nuclear radiation is a real threat to Tarapur personnel was reported in late 1973 by John Walker, chief startup engineer of the San Francisco (USA) Power Division, who visited the plant. He said:

"During the last refuelling outage on Unit 1, which was completed in May 1973, at total of 1,800 Manrems (Rem, or Roentgen Equivalent Man, is the unit by which radiation exposure is measured) of exposure were received by Tarapur Atomic Power Project and Bhabha Atomic Research Center personnel.

"This total exposure is the equivalent of 'burning out' 400 people for a year."

In a letter to US Congressman John E. Moss, US Nuclear Regulatory Commission official Lee V. Gosnick pointed out that the average dose levels to Tarapur personnel during 1972-74 were "about twice the US level in those year."

He added that the level of radiation exposure among the neighboring population in Tarapur from land, water and air sources are "higher than permitted under the US criteria that radioactive effluents be 'as low as reasonably achievable'."

The mode of disposing Tarapur's radioactive waste, or radwaste, is one reason why near civilian populations are at risk. The bulk of the waste is thrown into the Arabian Sea on whose banks Tarapur is located. As a result, the region's fish population is dwindling. Local fishermen complain that while they could load at least seven truckloads of fish per day before, now they can hardly load one truck.

Walker's report says 'excessive leakage in the drywells causes unscheduled shutdown, contributes to overloading of the radwaste

systems. The capacity of the radwaste facility is inadequate for the present operating conditions. Approximately 25,000 gallons per day of dirty radwaste are processed and discharged. This is three times the volume of dirty radwaste which the system was designed to process."

Even in other parts of the world, fool-proof measures to contain long-lived radioactive wastes - some can remain active for thousands of years - are yet to be evolved. Radwaste is usually kept in surface repositories but in 1975 4,500 tons of low-level nuclear waste were dumped in the Atlantic west of France. Soon after, it was discovered that plutonium had become widely distributed in the oceans. It was even suspected that it could have entered the marine food chain.

Indian scientists are worried about the secret policy maintained by India's Department of Atomic Energy regarding Tarapur. No one still knows exactly how much radioactivity leaked into the reactor building last March.

What was the actual radiation dose registered by personnel film badges and dosimeters? How many modifications, if at all, have been made at Tarapur following the Three-Mile Island incident in the US in 1979 (after the accident, all US power reactors are required to implement 175 'discrete actions' to ensure safety)?

India set up the Tarapur nuclear reactor hoping that nuclear power will be cheaper than oil, hydro or thermal power in the long run. But Tarapur's performance is hardly significant. In the US, Japan, West Germany, Switzerland, Britain and other countries, nuclear power plants meet from 12 to 16 percent of the total power requirement. Tarapur and other Indian nuclear plants meet only 2.4 percent of the country's power needs.

In calculating the cost of nuclear power, the Indian Atomic Energy Commission also assumed that enriched uranium would be available from the US on a lease, or an equivalent, basis and that credit would be received for plutonium returned to the US.

But the US dilly-dallied on the request of then Prime Minister Morarji Desai for nuclear fuel. The answer is still uncertain this year. Thus, Tarapur's dependence abroad has led to the import of faulty technology at the initial stage and uncertain fuel supplies this time. And what about radioactive wastes and leaks in the future? - (Depthnews Science)

INDIA

BRIEFS

FUEL FOR TARAPUR REACTOR--New Delhi, Aug 20:--India is trying to develop indigenous fuel for the Tarapur atomic reactor Prime Minister Indira Gandhi told the Parliament on Monday. Replying to a question she said that "investigations" into a mixed oxide fuel were going on but it would be premature to spell out results achieved. Mrs Gandhi added that at the same time steps were being taken to enforce continued operation of the Tarapur project in the event of stoppage of enriched uranium supplies from the United States. INA. [Text] [Karachi DAWN in English 21 Aug 80 p 5]

RAJASTHAN ATOMIC PLANT--The Rajasthan Atomic Power Plant near Kota, which went out of commission on Sunday, has resumed the generation of power. According to a spokesman of the State Electricity Board, the plant had generated 60 megawatts of power last evening. [Text] [BK100344 Delhi Domestic Service in English 0240 GMT 10 Sep 80]

CSO: 5100

INDONESIA

NUCLEAR RESEARCH FACILITY, PROJECTED POWER GENERATION

Jakarta PELITA in Indonesian 18 Jun 80 pp 1, 7

[Excerpts] It is hoped that by the end of the 1980's Indonesia will enter the nuclear era of electric power supply with a minimum capacity of 600 megawatts.

This appraisal was made by the minister of research and technology, Dr B. J. Habibie, before a group of research scientists working for the Research Institute for Pure Materials and Instrumentation and the National Atomic Energy Agency (BATAN), Yogyakarta, after an inspection tour of the research center facilities Tuesday.

The minister of research and technology's assessment was based on two feasibility studies on the supply of electric power by means of nuclear power development in Indonesia.

The said feasibility studies were prepared by the State Electricity Enterprise (PLN) and NIRA, an Italian research body, which estimated that by the year 1997 Indonesia's nuclear electric power will generate 2,600 megawatts (mg).

Consequently, some 26,000 megawatts of power will be made available by about the year 2010.

Separate BATAN and NIRA studies estimated that some 600 mg will be available in 1987, an estimate regarded as realistic by the minister of research and technology.

The minister said that both feasibility studies reached the same conclusion, but he added that by the end of the 1980's Indonesia will have entered the nuclear age with regard to the supply of electric power.

Therefore, he continued, Indonesia must be prepared to enter the nuclear age and consider the economic implications.

Based on the 1979 estimate, the cost to develop 100 mg nuclear electric power is \$1 billion, which means that to develop 2,600 mg's would require \$26 billion.

As this huge cost cannot be obtained from export revenues, the minister called for the manufacture of component parts of nuclear reactors domestically.

However, the quality of these locally made parts must be safeguarded to ensure the proper operation of the nuclear reactors.

The minister of research and technology was accompanied by Professor Baiquni in his inspection of BATAN's research center.

The BATAN research center in Yogyakarta started out with 30 workers, using premises loaned by Gajah Mada University's College of Natural Sciences. At present it has a total of 400 workers, 25 percent of whom are research scientists, 60 percent technicians and 15 percent administrative personnel.

During the Second Five-Year Plan, this research center operated on a routine budget of over 520 million rupiahs and a project budget of more than 2.963 billion rupiahs. With these funds, it constructed 14,000 sq. meters of office buildings and other facilities, as well as official housing on 65 hectares of land.

This research center now has a nuclear physics laboratory, a chemical laboratory, a chemical radio laboratory, a reactor building, a uranium refining laboratory, a radioactive waste refining laboratory, a moderator material laboratory, an administrative library building, a master workshop, a main boiler house, a chemical materials warehouse, electric generators, a boiler house, reactor cooling chamber and other facilities.

A budget of about 2 billion rupiahs has been earmarked for the further development of this research center during the period of 1980-81.

The director of the research center hoped that the minister of research and technology would show concern over the welfare of the research scientists so they would not quit their posts.

9300

CSO: 5100

JAPAN

BREAKTHROUGH IN ZIRCONIUM SPONGE PRODUCTION REPORTED

OW250923 Tokyo KYODO in English 0759 GMT 25 Aug 80

[Text] Tokyo, 25 Aug (KYODO)--Two Japanese firms have completed the development of epoch-making technology for the production of zirconium sponge, indispensable for nuclear power plant fuel as a cladding material. The possibility thus emerges of Japan replacing the United States as world's largest supplier, it was disclosed Monday. The new method, known as the distillation with differential partial condensation, requires only chlorination and distillation for separation of hafnium in iron ore, the most difficult process, according to Ishizuka Research Inc, a Japanese chemical research and technical consultant, and Mitsui and Co, Japan's second largest general trading house. It also dispenses with solvent and acid used in the conventional method, which caused major pollution problems, they said.

The two firms have invested yen 500-600 million in a 12-year program to develop the new process, enabling commercial production of five tons per batch with hafnium content of 30-80 ppm. Thus, Japan can compete with the United States, which now holds an 80-percent share of the world market, by producing zirconium in an integrated manner from iron ore both in Japan and other parts of the world, the announcement said.

The two firms plan to form a new company for monthly production from 1982 of 100 tons of zirconium sponge at 3.30 per pound or about one half of cost of \$6-7.00 per pound under the conventional method. Current market price of zirconium sponge is estimated at dollar 10.00 per pound.

So far, the zirconium sponge has been produced in Japan by Zirconium Industry Inc, a joint venture between Mitsui, Ishizuka and Teledyne Industries in Los Angeles, an American conglomerate of special metal, ocean prospecting and electronics equipment, and most of them have been imported from the U.S. At present, Teledyne produces 4,000 tons of zirconium a year, France's Pechiney Ugine Kuhlman 1,600 tons, America's Western Zirconium 1,500 tons and Zirconium Industry 300 tons.

CSO: 5100

REPORTS ON NUCLEAR ARMS PROGRAM CITED

LD011532 Moscow TASS in English 1517 GMT 1 Sep 80

[Text] London, 1 Sep, TASS--Pakistan independently produces nuclear fuel out of uranium ore. This was stated at a press conference in Karachi by Munir Ahmad Khan, chairman of Pakistan's Atomic Energy Commission. As a REUTER correspondent reported, the Pakistani scientist also said that a uranium-ore processing plant has been built in Chasma township in north Pakistan. According to the scientist, Pakistan's nuclear programme is of peaceful directedness.

The Pakistani administration has stated more than once that it does not intend to develop atomic power for military purposes and does not intend to make nuclear weapons. However, numerous reports by the international press give serious ground to doubt the sincerity of such statements. Thus, early in August this year a report by London's International Institute for Strategic Studies on the development of Pakistan's nuclear power towards the creation of its own atomic bomb was widely commented upon by countries of neighbouring on Pakistan. The report pointed out that Pakistan was virtually ready for the production of nuclear weapons.

Reports that Islamabad's nuclear ambitions are not at all limited to the use of atomic energy for peaceful purposes appeared in the press after the recent visit to Beijing by Pakistani ruler Ziaul Haq. According to India's news agency, the PRESS ASIA INTERNATIONAL, at the talks in Beijing the Pakistani president was assured that China would help it to join the nuclear club. According to the data of the Hong Kong journal ASIA WEEK, Pakistan has already spent not less than 2,000 million dollars for the creation of its own nuclear bomb.

The nuclear weapons development effort is being made in Pakistan simultaneously with increased military preparations. Thus, military appropriations which have grown by 20 per cent in the 1979-1980 financial year are to increase, as was officially announced, by over 12 per cent more in the 1980-1981 year. At present military expenditure swallows up to 60 per cent of the country's state budget. Islamabad's risky line towards militarization arouses a legitimate concern in the countries of South and south-west Asia.

CSO: 5100

KANUPP REPAIR, EMERGENCY PROBLEMS NOTED

Power Output Resumes

Islamabad THE MUSLIM in English 31 Aug 80 p 6

[Text] Karachi, 30 Aug--Pakistan has succeeded in fabricating nuclear fuel for the Karachi Nuclear Power Plant (KANUPP) which has already resumed generation using a mixture of imported and indigenous fuel.

This was disclosed in Karachi today by Inamul Haque Khan, minister for water and power while talking to newsmen after inaugurating a symposium on "Power Distribution and Management."

Progressively the imported content from the fuel mix will be eliminated and KANUPP will run on our own fabricated fuel," the minister told newsmen.

He said the Nuclear Power Plant was at present producing about 35 megawatts to 40 megawatts and early next year it will reach 70 to 80 megawatts.

The minister said the fuel had been fabricated by the Pakistan Atomic Energy Commission and commended their efforts.

He said at present the KANUPP has resumed operations using partly Canadian and partly indigenous fuel but it will speedily shift to purely locally fabricated fuel.--PPI

Emergency Spares

Islamabad THE MUSLIM in English 2 Sep 80 p 8

[Text] Karachi, 1 Sep--A spares inventory scheme for KANUPP has been devised by the Pakistan Atomic Energy Commission to hold in stock spare components of certain critical plant equipment in an assembled form for ready replacement when needed to avoid delays in the restoration of systems to normal operating conditions it was learned here today.

The scheme has proved to be most economical for overall improved plant availability and rigid control of maintenance work quality.

Helium blowers, for example, were subjected to abnormally high frequency of failures in KANUPP due to inherent system deficiency resulting in frequent plant shutdowns.

Besides taking steps to overcome design deficiencies the system was modified to accept a shop-assembled and tested blower and remove failed unit without substantially changing the conditions of the plant systems. This has resulted in the cutdown of maintenance period by as much as 80 per cent besides providing opportunity for exercising more effective control over the quality of maintenance work.

This scheme has been extended to other critical components of the plant within limitations of economic considerations.--PPI

CSO: 5100

BRIEFS

SELF-SUFFICIENT FUEL PRODUCTION--Islamabad, September 1 (XINHUA)--Pakistan has been self-reliant in the production of nuclear fuel from natural uranium, declared Chairman Munir Ahmed Khan of the Pakistan Atomic Energy Commission yesterday. He told a press conference in Karachi that a nuclear fuel manufacturing plant, using the abundant supplies of indigenous uranium, has been set up at Chashma in the North West Frontier Province by Pakistani engineers and nuclear scientists through their own efforts. The nuclear fuel produced in Chashma, he added, would be used for running the Karachi nuclear power plant. The plant, which went into operation in 1972, mainly relied on foreign supply of nuclear fuel in the past. As a result of self-sufficiency in the production of nuclear fuel, Pakistan would be able to save about \$40 million in foreign exchange every year. The commission is now engaged in preparatory work for the construction of the country's second nuclear power station at Chashma. [Text] [OW011228 Beijing XINHUA in English 1213 GMT 1 Sep 80]

RADIOACTIVE IODINE-131 PLANT--A plant to produce radioactive iodine-131 has been set up and commissioned by a scientist of the Pakistan Atomic Energy Commission at Pinstech [Pakistan Institute of Science and Technology] in Islamabad. The indigenous production of this particular isotope will save considerable foreign exchange as it is used in large quantities in the six nuclear medical centers in operation in the country. Pinstech also produces 16 other radioactive compounds, meeting a considerable part of the isotope requirements of the country. [Text] [BK311051 Karachi Domestic Service in English 1005 GMT 31 Aug 80]

CSO: 5100

PHILIPPINES

GOVERNMENT TO RESUME NUCLEAR PLANT CONSTRUCTION

04210951 Hong Kong AFP in English 0915 GMT 21 Aug 80

[Text] Manila, 21 Aug (AFP)--Finance Minister Cesar Virata today said the Philippine Government was resuming construction of the nuclear plant project after Westinghouse agreed to absorb part of the costs of the required additional safety features.

Mr Virata told the Foreign Correspondents Association of the Philippines that the agreement had been reached after the additional safety features of the project had been approved by the U.S. Nuclear Regulatory Commission as well as by the Philippine Atomic Energy Commission. The finance minister, however, did not specify the percentage of cost overrun to be shouldered by Westinghouse and by the Philippine Government.

According to him, the project which had been stopped in 1979 would require additional financing of \$400 to 700 million. Despite this additional funding, Mr Virata said the economics of the project whose original cost was \$1,200 million had improved since oil price increases had risen way above the cost estimates when the project was conceived.

The nuclear plant project, located some 115 kilometers (70 miles) northwest of Manila, had been stopped by President Ferdinand Marcos based on public opposition that point out the alleged lack of safety requirements of the project.

The investigation committee created to look into the safety aspects of the project recommended the need to put up additional devices to ensure the plant's safety in case of earthquake and other calamities. Negotiations between Westinghouse and the Philippine Government had been conducted but it was only recently that an agreement had been reached after Westinghouse agreed to shoulder part of the additional project costs.

Since only minor points remain to be threshed out, Mr Virata said the Philippines has already scheduled the resumption of the civil works aspect of the project.

CSO: 5100

STATE CONTROL ON NUCLEAR SAFETY DECREED

Sofia DIZHAVEN VESTNIK in Bulgarian 11 Jul 60 p 1

[State Council of the Bulgarian People's Republic Ukase on Nuclear Safety State Control]

[Text] In accordance with Article 94, point 2, paragraph 2, of the Constitution of the Bulgarian People's Republic, the State Council of the Bulgarian People's Republic promulgates the following

Ukase No 1306

On State Control on Nuclear Safety

Article 1. The Committee on the Peaceful Utilization of Atomic Energy shall exercise state control over the nuclear safety of nuclear systems and on the accounting, storage, and transportation of nuclear material in the country.

Article 2. The committee shall issue technical stipulations on the nuclear safety of nuclear equipment and on accounting, storage, and transportation of nuclear material, mandatory to all ministries, and other departments and organizations. Formulating technical stipulations, the committee shall take into consideration the recommendations of international organizations of which the Bulgarian People's Republic is a member.

Article 3. Operative state control on nuclear safety and the accounting, storage, and transportation of nuclear material shall be provided by inspectors of the Committee on the Peaceful Utilization of Atomic Energy.

Article 4. The ministries, other departments, and organizations shall cooperate with the committee on the peaceful utilization of atomic energy in exercising control over nuclear safety and the accounting, storage, and transportation of nuclear materials.

Article 5. (1) Any individual who violates the present ukase or the legal act based on it shall pay a penalty of no more than 500 leva; the

penalty for a second violation shall range from 100 to 1,000 leva unless the delinquency calls for a stricter penalty.

(2) The violation shall be stipulated in a legal document issued by an inspector of the Committee on the Peaceful Utilization of Atomic Energy. The decree on the imposition of the fine shall be issued by the chairman of the Committee on the Peaceful Utilization of Atomic Energy and may be appealed in accordance with the Law on Administrative Violations and Penalties.

Article 6. Should the violation as per Article 5 create an immediate danger to the servicing personnel or the surrounding population, the chairman of the Committee on the Peaceful Utilization of Atomic Energy shall submit a suggestion to the Council of Ministers limiting the operation of the nuclear installation or to close it down completely.

Additional Stipulation

1. A "repeated" violation shall be a violation committed within 1 year following the enactment of the penal decree on the basis of which the violator has been penalized as per Article 5.

Concluding Stipulations

2. A regulation shall be issued by the Council of Ministers on the application of the present ukase.

3. The execution of the ukase shall be entrusted to the chairman of the State Committee for Science and Technical Progress.

Issued in Sofia on 3 July 1980 and sealed with the state seal.

Chairman of the State Council of the Bulgarian People's Republic:
T. Zhivkov

Secretary of the State Council of the Bulgarian People's Republic:
N. Manolov

5003
CSO: 5100

BRIEFS

ARGENTINA-BRAZIL COOPERATION--Brasilia--The chairman of the Argentine National Atomic Energy Commission [CNEA], Vice Adm Carlos Castro Madero, reported yesterday that the 240 tons of uranium that Brazil will receive from his country will be returned in the future with an accrued interest of 6.5 percent. According to the chairman, the bilateral agreement between the two countries has the objective of "self-sufficiency in the nuclear field, which is very extensive." It is precisely this extensiveness, he explained, that minimizes the fact that the two countries have different types of reactors: the Argentine system uses natural uranium, while the Angra dos Reis plant will use enriched uranium. Asked about the explosion limit [limite-explosao] of a nuclear device for peaceful ends, taking into account the extensiveness of the cooperation between the two countries, Castro Madero said that the subject was not discussed during the recent meetings, although potentially the bomb could be an outcome in the future. [Text] [PY261401 Rio de Janeiro O GLOBO in Portuguese 25 Aug 80 p 5]

CSO: 5100

ARGENTINA

GOVERNMENT INITIATES STEP TO RATIFY TIALTELOLCO TREATY

PY151321 Buenos Aires TELAM in Spanish 1716 GMT 13 Aug 80

[Excerpts] Buenos Aires, 13 Aug (TELAM)--An official of the Foreign Ministry's international organizations department today said that Argentina has begun to take the steps to ratify the Tlalteolco treaty and will ratify it when it receives assurances that its legitimate rights will be adequately protected.

The legitimate rights Argentina seeks to secure in order to ratify the treaty are those outlined in article 18, which empowers each signatory: to carry out explosions of nuclear devices for peaceful purposes, including explosions that would require devices similar to those used in nuclear weapons; to cooperate with third parties for the same purposes since the Argentine Government believes--as it stated in a note submitted at the signing of the treaty on 27 September 1967--that the provisions of article 18 ensure the use of nuclear energy as an indispensable tool in promoting the development process in Latin America and are, consequently, a basic condition for laying the foundations of an adequate balance of responsibilities and obligations among both nuclear and nonnuclear powers regarding nonproliferation.

The Argentine Government, in line with its legal tradition and policy regarding the sovereignty of states, thus requests that each state be guaranteed the right to use, as it wishes, its own nuclear experience, technology and development, always for peaceful purposes.

For the time being, our country has been negotiating an agreement with the International Atomic Energy Agency, headquartered in Vienna, to have the latter extend its safeguards to the Argentine nuclear program. This agreement, as stated in article 13 of the Tlalteolco treaty, should be in force no later than 18 months after the date of initiation of the negotiations.

CSO: 5100

BRAZIL

BRIEFS

IAEA CONFERENCE DELEGATION--President Figueiredo today appointed Hervaldo Guimaraes de Azevedo, chairman of the National Nuclear Energy Commission, as head of the Brazilian delegation to the 24th regular session of the International Atomic Energy Agency (IAEA) to be held in Vienna as of 22 September. [PY030200 Brasilia Domestic Service in Portuguese 2200 GMT 2 Sep 80]

CSO: 5100

CHILE

BRIEFS

PROSPECTING FOR RADIOACTIVE MINERALS--The chairman of the Chilean Nuclear Energy Commission, Col Romualdo Pizarro Seymour, has reported that prospecting for radioactive minerals in the First Region will begin very soon. He stressed that Chile not only has important uranium reserves but also has one of the largest world reserves of lithium. He indicated that the lithium has been declared one of the country's strategic resources. He explained that his commission will soon begin prospecting for radioactive minerals in the First Region with the support of an international firm. [Excerpt] [PY141417 Santiago Chile Domestic Service in Spanish 1100 GMT 14 Aug 80]

CSO: 5100

BRIEFS

NUCLEAR SAFETY COMMISSION ESTABLISHED--The installations of the National Commission for Nuclear Safety and safeguards were dedicated yesterday morning by Jose Andres Oteyza, head of SEPAFIN [Secretariat of Patrimony and Industrial Development]. The commission is to establish norms for the protection of the safety and health of the Mexican people and see that these, as well as the international treaties concerning nuclear and radiation safety, are complied with. The commission was established on 2 January 1979 by the regulatory law of Article 27 of the Constitution concerning nuclear material, which also established the National Institute for Nuclear Research (ININ) and the Mexican State Uranium Enterprise (URAMEX). The program of work to be done by the commission includes four principal areas: evaluating and granting licenses to nuclear installations; observing the radiation safety norms, safeguards and physical security in the nuclear installations as well as in the management and utilization of materials; and observing safety norms in the exploitation and use of radioactive minerals. The secretary of SEPAFIN was accompanied at the inauguration ceremony by Ruben Bello, technical secretary of the Nuclear Safety Commission and Fernando Hiriart, undersecretary of mines and energy of SEPAFIN. [Text] [Mexico City EL SOL DE MEXICO in Spanish 22 Jul 80 p 3-B] 8735

CSO: 5100

ISRAEL

ENERGY MINISTRY EXAMINES OPTIONS OF NUCLEAR POWER PLANT SUPPLY

TAFILBEE Jerusalem Domestic Service in English 1700 GMT 21 Aug 80

[Text] In a major new departure, Israel is reportedly considering buying a nuclear power plant in Europe instead of the United States. Looking into that story is reporter Shimon Ayalon.

Officials in the Energy Ministry would not confirm nor deny that Israel is shopping for a nuclear reactor in Europe, specifically France or West Germany. They would only say that Israel is currently checking all options and will not rule out any country as a future supplier of the plant necessary if Israel is ever going to get around to harnessing nuclear energy for electric power. When this was originally mooted some 10 years ago, the estimate of the cost of a 900-megawatt station was about \$1 billion and it would have taken some 10 years to build. Today, the cost has roughly doubled and it will take some 12 to 15 years from the foundation stone till the final electricity-producing nuclear station.

Israel was negotiating with several major American companies about the supply of a nuclear core. Negotiations with Westinghouse were getting into the serious stages when, officials say, the U.S. Government under President Carter stepped in and stopped the deal. One of the American demands was that Israel signed the nuclear nonproliferation treaty and submit its nuclear plants to international inspection. Israel refused, so that's stopped the negotiations with Westinghouse.

There is still hope that the Americans might withdraw their objections and let Israel go nuclear in the electric power sense. It is also hoped that the \$2-billion bill will be footed jointly by the U.S. Government and world Jewry for a nuclear energy plant in the Negev desert, provided Israeli environmentalists don't object.

One possibility mooted for a number of years is to site the plant or plants along the course of an artificial canal cut from the Mediterranean to the Dead Sea. The canal would serve hydroelectric purposes and its water flow would cool any nuclear piles. Israel currently has an installed capacity of 2,600 megawatts. The projected figure for 1990 is about twice that amount. So, if all goes well and work is begun on a 900-megawatt power station, maybe by the time it's completed, it will supply 15 percent of Israel's fuel needs.

CSO: 5100

BRIEFS

NEW GORKIY NUCLEAR STATION--Gorkiy--The country's first urban nuclear heat supply station is being erected on the outskirts of Gorkiy. The station is a pioneer of the nuclear heat and power industry, the first in a series which are planned for construction in the country. "The total thermal capacity of the station's two power units is 1 million kilowatts. This produces enough heat to supply a district with a population of 350,000." Thanks to the high level of automation, very few people will be needed to service the station. "When it is started up it is proposed to close dozens of conventional heating plants. The city's air will become cleaner. The design provides for highly reliable protection against radioactive pollution and radiation. The water supply system is a closed network. Water heated by the reactor will be used repeatedly, without leaving the station. The heating pipes along which the water will travel to apartment blocks and production and other sites are also reliable." [LD210907 Moscow PRAVDA in Russian 14 Aug 80 p 6]

CSO: 3100

URANIUM PROSPECTING, MINING ON UPSWING NATIONALLY

Paris LE MONDE in French 6 Aug 80 p 12

[Article by Marc Ambroise-Rendu]

[Text] Chanteloube is a lovely name that uranium miners have turned into an offensive wound disfiguring the green hillsides of Limousin. Imagine, along the very edge of National Highway 20--one of the main seasonal migrational routes for vacationers--a crater more than 100 meters deep in which murky water stagnates. Around it, over an expanse of 18 hectares, the Limousin granite has been dug to the bone. The refuse from these operations--known as the deads--is piled up in hideous heaps on which nothing, it seems, will ever grow again.

The effect is one of totally adverse publicity against anything nuclear. For, the "landscaper" here is none other than COGEMA [General Nuclear Materials Company], a state-owned enterprise, the largest mining enterprise in the uranium sector.

Consequently, the company has decided to effect a "model" reconstruction at Chanteloube. The maquette for this project is already on display in the office of Mr Yves Puibaraud, the company head for this sector. The crater's lake will be surrounded by a promenade and the profile of the terrain remodeled by bulldozer to blend with that of the hills. The deads heaps will be dusted with loam, fertilized with sludge from the Limoges water purification plant, then greened with mechanical sowers, and planted with genista, spruces, chestnut trees and birches.

The cost of this transformation: 1 million francs. Twelve hectares of land will then be ceded to the municipality of Bessines at a token price. COGEMA suggests that there then be installed at Chanteloube: windmills, a biomass research center and even a Limousin minerals museum featuring, of course, uranium ores.

COGEMA cares about its public image. Of course, the uranium miners have been in Limousin for the past 30 years. The company operates four mines there, six opencuts, and a processing plant that produces 1,000 tons a year

of uranium in the yellow powdered form called "yellow cake" by the new gold hunters. Certainly, it provides jobs for 1,600 persons, whose wages and salaries total on average 100 million francs a year. However, it still holds permits to explore 30,000 hectares throughout the region and is concerned that growing resistance among the inhabitants will make it harder and harder to open new quarries.

For, uranium no longer dazzles; it frightens. It is also feared because of the fever that has seized the mining companies. In just a few years, they have sprung up like mushrooms, and their prospectors have swarmed out over our countrysides. Applications have been filed for exploration permits, covering 450,000 hectares, in some 20 departments of the Hexagon [French familiar term for French mainland]. These would be in addition to the more than 530,000 hectares covered by the permits that have already been issued. The mines and quarries in operation number in the dozens; they occupy 13,000 hectares, and new ones are being opened every year. Eight processing plants are in operation, most of them located in the Massif Central. The most recently discovered deposit lies within the confines of the Gironde estuary and the Charente and Dordogne rivers, in sedimentary formations that ordinary mortals considered non-uraniferous. There is thus not a corner of the mainland that is safe from the producers of "yellow cake," the fuel of nuclear power plants.

As a consequence, those opposed to it have risen en masse. Choosing the district of Bessines--site of Europe's largest deposit and processing plant --to meet in early July, some 100 representatives of anti-uranium associations gathered there from the four corners of France, but also from 13 European countries (LE MONDE 8 and 9 July). Such a congress had never been held before; it was a sign of the times.

On the terrain, in full view of the gaping quarries, along streams where the Geiger counters crackled louder than elsewhere, in working parties, the conferees investigated the uranium mining ecological process. The principal count in their indictment: the damages caused by it to farming activities, to natural beauty spots, and to highways.

COGEMA pleads its case point by point. "First of all," it says, "before starting a new operation, we must prepare an impact study which is made public. True, the first of these studies, which concerned the Bonnac mine in Haute-Vienne, was found deficient by the Ministry of Environment. We amended it, and, since then, we have paid more attention to the environment. As regards land, we own 750 hectares in Limousin, but since we have no calling to be landowners, we resell it after completing our operations: to farmers, to the National Forestry Service, or to the district administrations if they want it. In Haute-Vienne, 31 hectares have already been so disposed of. This policy will continue."

The countryside? COGEMA likes to show the quarries that, after having been worked, have been backfilled, planted with trees or transformed into prairies. This work, it appears, costs COGEMA 1 million francs a year, which is incorporated into the price of the uranium.

Even after the wound of Chanteloube is healed, there will be another even more considerable one at 1,500 meters from Bessines. There, neighboring on each other, are the piping of the processing plant, an old mine, an abandoned quarry and the mountains of debris from the threefold operation. One wonders how this sector of the Gartempe valley, literally devastated by that industry, can ever be "healed."

In any event, the future of the tens of kilometers of underground galleries which, after the veins have been worked out, will remain in the Limousin granite, is mortgaged. There is no way they can all be knocked down or backfilled with deads. Will there not be a temptation some day to convert them into radioactive waste dumps as is currently being done with the old Saint-Priest-la-Prugne mine within the confines of the Loire and the Lozere?

What about the roadbeds that have been torn up by the coming and going of ore-laden trucks? COGEMA responds by flashing its checkbook. If need be, it will contribute to the cost of rebuilding them.

We come now to the second grievance: It has to do with the diverting of water courses and the radioactive contamination of the waters. This is a burning issue in Limousin, which has given rise to long drawn out controversies and even to roadblocks, as was recently the case in the hamlet of Grandmont. COGEMA recognizes that the digging of galleries can drain off underground water veins and dry up certain springs. "In these cases," it says, "we either open up new sources at our own expense or, as we have done in such and such districts, we share in the building of water supply system." There remain the torrents of muddy and radium-laden waters being extracted day and night by pumps from the mine pits. Until recently, they aroused hardly any concern, and after being filtered and treated they were being discharged into the streams. Certain of these streams fed directly into the three ponds that serve as a reservoir at Limoges. The ecological associations must be credited with having brought this, to say the least, offhand practice to the attention of the public.

Long drawn out polemics followed on the question of whether or not these waters still contained enough radioactivity to be dangerous. COGEMA maintained that after having neutralized the radium content by means of barium chloride they were no longer dangerous. "Tests by our own services and by those of the SCPRI [Central Protection Service Against Ionizing Radiations] (under the Public Health Ministry) show that their radioactive content is below the established norms," it insisted. The ecologists, however, brought out different figures, and the debate raged for months over "micro-microcuries."

To bring it to a conclusion, the prefect of Limousin convened those concerned in October 1979. There were no less than 60 persons (government employees, elected officials, physicians, industrialists, representatives of associations) gathered around the green carpet. After several hours of debate, major decisions were taken. COGEMA must divert its waters away from the reservoirs of Limoges. The cost: 3 million francs.

All more or less untreated waste, and in some cases old waste, not covered by an authorization will be reexamined by the local authorities. The company may no longer evacuate water from its mines without an authorization from the SCPRI. The results of radioactivity analyses will be examined by the departmental Board of Public Health. The Siting and the Urbanization Commissions will be consulted prior to the issuance of all exploration permits. The people of Limoges have thus begun to take their own affairs in hand. During these proceedings, moreover, they learned that 60 percent of the wells in the region were bacteriologically polluted. The mayors will be hearing this matter discussed further.

Although the ecologists won an incontestable victory here, they are still not satisfied. They point out that rains can leach out the spoil heaps, that these are not neutralized, and that radioactivity can accumulate in the muds, the vegetation and the fish. They are demanding the creation of a commission on mining deads and wastes.

Anti-Radon Badges

The third blemish in the uranium record is that of its dusts and radioactive gas--radon--which emanates at all stages of the work: at the ends of the galleries, in the quarries, during transport of the ore, and while it is being treated. The miners are obviously the most exposed to these hazards, and above all to the siliceous dust hazard. The latter is averted by injecting water into the rock drill bits and by wetting down the stopes continuously.

On the other hand, the radon that emanates from the rock from the moment it is broken up is more injurious. The seriousness of this hazard had not been realized until some 12 years ago when statistics were published in the United States and in Czechoslovakia on the incidence of lung cancer among uranium miners. The death rate from lung cancer among uranium miners was substantially higher than in the rest of the population. The entire world now agrees that radon is a dangerous gas. As a result, the mines of Limousin are equipped with arrays of ventilating ducts, blowers and special shafts that provide continuous ventilation of the cutting surfaces. The radon is literally drawn up into the open air, which is counted on to dilute it and, within a few days at most, to deplete it of its radioactivity.

L'URANIUM EN FRANCE



Key:

- | | | |
|------------------------|------------------------------|------------------------|
| A. Mines and quarries. | B. Ore concentration plants. | C. Exploration permits |
|------------------------|------------------------------|------------------------|

Uranium in France: Most of the uranium mines and quarries opened until now are in granitic zones, and the concentration plants have been installed in their immediate vicinities. But the exploration permits issued reflect a considerable expansion of the sectors concerned. The "star" of future operations is now pointing toward Alsace, Savoy, the Maritime Alps, the Eastern Pyrenees and Aquitaine.

Map numbers identify mines and quarries as follows: 1. Lignol (Morbihan); 2. Tesson-la-Garenne (Loire-Atlantique); 3. Clisson (Loire-Atlantique); 4. Mallieuvre (Vendee); 5. Le Cherbois (Haute-Vienne); 6. La Gartempe (Haute Vienne); 7. Saint-Sylvestre (Haute-Vienne); 8. Croze (Creuse); 9. Grury (Saone-et-Loire); 10. Gueugnon (Saone-et-Loire); 11. Saint-Privat-La-Prugne (Loire); 12. Ambert (Puy-de-Dome); 13. La Besse (Correze); 14. Les Prades (Haute-Loire); 15. Grandrieu (Lozere); 16. Bertholene (Aveyron); 17. Bennac (Aveyron); 18. Lodeve (Herault).

The miners as well as the workers in the processing plant wear film badges that enable the medical services to determine at all times the absorbed doses of radiation received by the wearer. The ecologists, however, point out that neither the drivers of the dump trucks belonging to the subcontracting companies, nor the rural inhabitants living in the vicinity of the ventilating shafts and of the dead heaps, are being so monitored. In these circumstances, every case of lung cancer becomes suspect. COGEMA's physicians respond by producing comparative statistics on deaths from cancer of the respiratory apparatus. The figures for Haute-Vienne (where uranium has been mined for the last 30 years) are lower than those for all rural districts in France as a whole. The ecologists, nevertheless, are pressing for a more detailed epidemiological study of the uraniferous districts.

Their demand is not at all exorbitant. The industrialists have too often erred through carelessness or ignorance to be believed on the basis of their word alone. As to nuclear activities, the time is past due for removing the veil of secrecy in which they have been intentionally wrapped. During the big confrontation in the Limoges prefecture, the Loire-Brittany Basin Agency specialists themselves complained of the "hermetic" nature of the radioactivity measurements published by the Public Health Ministry.

Much is known about uranium operations: how many tons of metal are being produced, how many millions of francs they bring in, how many jobs they create. But we are far from knowing as much about the long-term hazards they are compelling the sites, the waterways and the populations to undergo. In this regard as in the other, the citizens are demanding a truthful balance sheet of benefits and costs.

FOOTNOTE

1. [This numbered footnote appears at end of text without reference to it therein as published]: FLEPNA [Limousin Federation for the Study and Protection of Nature]: UER [Teaching and Research Unit] for Sciences, 123 rue Albert-Thomas, 87060 Limoges Cedex.

9399

CSO: 5100

NORWAY TO LIMIT EXPORT OF NUCLEAR PRODUCTS TO TREATY STATES

Oslo AFTENPOSTEN in Norwegian 13 Aug 80 p 8

[Text] Geneva, 12 Aug--UPI--In the future Norway will limit its exports of products in the nuclear category to countries that are members of the nonproliferation agreement. Therefore we will require comprehensive safety controls as a condition for any delivery to non-nuclear lands.

So said undersecretary Johan Jorgen Holst in the major Norwegian speech at the nonproliferation treaty's second supervisory conference in Geneva which started on Monday. The conference will continue until 5 September and it is expected that the treaty on nonproliferation of atomic weapons will meet its hardest test to date.

At the conference the progress made since the nuclear nonproliferation agreement was reached in 1968 will be summed up. Representatives of 70 of the 114 nations signing the agreement are attending the meeting.

In the Norwegian speech at the conference on Tuesday undersecretary Johan Jorgen Holst started off by pointing out that the number of nuclear states had not increased since the agreement was reached 12 years ago. "But it should be a source of concern that several threshold states in politically unstable areas have not joined in the nonproliferation agreement," Holst stressed.

He also called for quick ratification of the SALT-II agreement and a continuation of these negotiations in SALT-III.

"In this context the Norwegians lay special emphasis on the rapid introduction of talks aimed at avoiding a nuclear arms race on the European continent. As nuclear weapons are assigned a greater role with regard to European security this will be incompatible with consolidation of nonproliferation regimes in the global context," Holst said.

He went on to point out the strict limitations inherent in translating nuclear arms power into political influence. He said that the nuclear powers must refrain from incorporating the use of nuclear power threats in diplomatic contexts.

"The countries equipped with nuclear weapons have a special responsibility when it comes to reaching agreements that restrict their efforts to gain unilateral advantages. In this context the nonproliferation agreement is of central importance because the emphasis is on the idea that acquiring nuclear weapons is not the correct course to pursue in the search for security," said Holst.

6578

CSO: 5100

LEADER OF GROUP OPPOSING N-POWER VOWS TO CONTINUE FIGHT

Stockholm DAGENS NYHETER in Swedish 15 Aug 80 p 3

[Article by "TT": "Lennart Daleus Says 'There Must Be Opposition to Nuclear Power'"]

[Text] Lund--"We obtained an upper limit to the expansion of nuclear power in Sweden by means of the referendum on nuclear power, but the organized opposition to nuclear power must continue to exist both in order to see to it that that limit is never reached and to make sure that the politicians keep the promises resulting from the outcome of the referendum--development of and concentration upon alternative sources of energy."

The above statement was made by Lennart Daleus, the spokesman of the People's Campaign against Nuclear Power, who drew attention to his intention to continue his antinuclear power work after the campaign for a referendum last spring at a press conference in Lund on Thursday.

The People's Campaign is arranging for another antinuclear power march from Barseback to Lund on 13 September. That will be the fifth such march but the first one since the nuclear power referendum.

The People's Campaign intends to reorganize in conformity with usual organizational patterns, with membership available to individuals but with local People's Campaign committees as a basis.

"During the campaign for a referendum, about half a million people were more or less active in the People's Campaign. Of course it is entirely unrealistic to try to operate with so many people. I myself have figured on a minimum of 20,000 members right from the beginning," Daleus says.

The People's Campaign's principal demand continues to be that an end be put to nuclear power use in Sweden.

"But putting an end to it is pushed farther into the future every day. Therefore we have to make sure that the community actually concentrates so hard on the development of alternative sources of energy that the upper limit of 12 reactors in 25 years can be maintained," he says.

"Powerful forces are going to work for both more reactors and a longer period of time," says Daleus.

SWEDEN

BRIEFS

SPENT URANIUM TO UK--The OKG [Oskarshamn Power Group] is sending approximately 50 tons of spent nuclear fuel to England this fall to be worked up. The government gave the go-ahead signal for transporting it on Thursday. The SKI [Nuclear Power Inspectorate] and the Department of Shipping are going to prescribe the conditions under which it will be carried. This will be the third shipment of spent nuclear fuel from the two nuclear reactors in Oskarshamn. The first one went in 1976 and the second in 1979. Everything is done in accordance with an agreement between the OKG and the BNFL [British Nuclear Fuel, Ltd] on working up spent fuel. The working up is to be accomplished in Windscale. The installation there is being rebuilt now so that it can handle both English and foreign spent nuclear fuel. While waiting for the rebuilding to be completed, the fuel will be stored in basins in Windscale. The shipment from Oskarshamn this fall will be carried out in special containers which can be salvaged if the vessel capsizes. New containers to be used for these shipments will become available gradually. They are to be produced at Uddcomb in Karlskrona. A new vessel for carrying spent fuel is also being prepared. It is to carry all shipments of radioactive material. The SKBF [Swedish Enterprise for Providing Nuclear Fuel] will order the vessel from some shipyard soon. [Text] [Stockholm DAGENS NYHETER in Swedish 15 Aug 80 p 3]

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